

What is claimed is:

1. A method for operating a microelectromechanical system that is fabricated using a substrate and that comprises an elongate coupling microstructure interconnected with a lever microstructure, wherein said elongate coupling microstructure
5 comprises first and second coupling ends, said method comprising the steps of:

accelerating said elongate coupling microstructure;

compressing said elongate coupling microstructure between said first and second coupling ends during at least a portion of said accelerating step;

moving said first lever end relative to said substrate in response to said
10 accelerating step, wherein said moving step is at least substantially solely controlled by external forces that are exerted on said elongate coupling during said accelerating step.

2. A method, as claimed in Claim 1, wherein:

said accelerating step comprises moving an actuator assembly microstructure relative to said substrate, wherein said actuator assembly microstructure comprises at
15 least one actuator microstructure.

3. A method, as claimed in Claim 1, wherein:

at least a portion of said accelerating step is due to inertial forces.

4. A method, as claimed in Claim 1, wherein:

said moving step comprises moving said first lever end along an at least generally
20 arcuate path.

5. A method, as claimed in Claim 1, wherein:

said moving step is within a first reference plane that is at least substantially perpendicular to a general lateral extent of said substrate.

6. A method, as claimed in Claim 1, wherein:

said executing a first moving step is within a first reference plane that is disposed other than in perpendicular relation to a general lateral extent of said substrate.

7. A method, as claimed in Claim 1, wherein:

5 said accelerating step comprises exerting a force on said elongate coupling structure microstructure having a component in an x direction of at least about $20\mu\text{N}$, wherein said x direction is parallel with a general lateral extent of said substrate.

8. A method, as claimed in Claim 1, wherein:

10 said compressing step comprises at least substantially precluding storage of any potential energy in said elongate coupling microstructure.

9. A method, as claimed in Claim 1, wherein:

15 said moving step comprises forming said elongate coupling microstructure with a buckle strength between first and second coupling ends of said elongate coupling microstructure that is greater than a maximum magnitude of a component of a force in an x direction that is exerted on said elongate coupling microstructure used by said accelerating step, wherein said x direction is parallel with a general lateral extent of said substrate.

10. A method, as claimed in Claim 1, wherein:

20 said moving step comprises at least substantially precluding flexure between opposite ends of said elongate coupling microstructure during said accelerating step.

11. A method, as claimed in Claim 1, further comprising the step of:

moving a mirror microstructure relative to said substrate using said moving, wherein said mirror microstructure is interconnected with a portion of said lever microstructure that is movable relative to said substrate..

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12. A method, as claimed in Claim 11, wherein:

said moving a mirror microstructure step comprises moving said mirror microstructure from a first position to a second position in no more than about 20 milliseconds.